REMARKS/ARGUMENTS

In the Office Action mailed April 18, 2003, claim 3 was rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Claim 3 has herein been amended to specify that the water-dispersible polymer is that of group (a) in claim 1. Support for this amendment is found in the specification and in the examples. It is believed that no new matter has been added to the application via this amendment.

Claims 1-18 stand rejected under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 4,894,397 to Morgan et al. in view of U.S. Patent No. 4,371,669 to Mylonakis et al. The rejection is respectfully traversed.

As noted in the specification, the aqueous polymer composition(s) of the present invention is an emulsion technology which exhibits both excellent water resistance and grease resistance through a sole vehicle (not through the traditional practice of blending of additional hydrophobic additives). This combination of resistant characteristics is intriguing in that water and grease have complimentary hydrophilic-hydrophobic natures, thus materials generally possess only resistance to either water or grease, but not both. The presence of fatty acid in the emulsion polymerization reaction is a key component in the production of these aqueous polymer compositions.

U.S. Patent No. 4,894,397 to Morgan et al. ("Morgan") teaches the production of stabilized, core-shell latex emulsions. In applying Morgan, the Office Action states (p. 3) that:

> The difference between the present claims and Morgan is the requirement in the present claims of a fatty acid. Morgan does not disclose a fatty acid. However, Morgan discloses a nonvolatile wax such as polyethylene waxes for the formulation of high gloss floor polish composition, column 13, line 25, wherein a water resistance property would be expected.

In his accompanying 37 C.F.R. § 1.132 Declaration, Dr. G. Frederick Hutter states that one skilled in the art would understand that fatty acids and polyethylene waxes are very

chained molecules which have relatively low molecular weights. In contrast, polyethylene

waxes are polymers that have relatively long-chained molecular structures. Such waxes are much less polar and have significantly higher molecular weights when compared to the fatty acids taught by the applicants. Due to these functionality dissimilarities and molecular weight differences a skilled artisan would recognize, as noted by Dr. Hutter, that fatty acids and polyethylene waxes exhibit very different physical and performance properties.

Another significant difference lies in the fact that Morgan teaches the addition of polyethylene wax to his emulsion polymer in order to formulate a high gloss floor polish (col. 13, lines 12-30). As noted by Dr. Hutter, Morgan only teaches producing a **mixture** of his emulsion polymer and polyethylene wax; he does not teach or suggest any type of chemical reaction between his emulsion polymer and polyethylene wax. In contrast, the applicants teach and claim reacting fatty acid in an **emulsion polymerization reaction** to produce their aqueous polymer composition. As stated by Dr. Hutter, a skilled artisan would recognize that the emulsion polymerization reaction of the fatty acid is a key factor in producing the chemical characteristics of the applicants' aqueous polymer compositions.

It is important to note that Morgan mixes polyethylene wax with his emulsion polymer in order to formulate a high gloss floor polish. As declared by Dr. Hutter, one skilled in the art would understand that Morgan adds the polyethylene waxes as **slip agents** in order to increase the resistance of the floor polish to marking, abrasion, and scuffing. It is well known in the art to employ polyethylene waxes as slip agents in floor polish formulations. Indeed, the accompanying Information Disclosure Statement contains pages downloaded from the Eastman Chemical Company website which describes the use of their EPOLENE E-43 wax (one of the two waxes taught by Morgan) in floor polishes to "provide mark resistance", as the wax "imparts excellent slip resistance" to floor finish emulsions. Likewise, the accompanying Information Disclosure Statement contains pages downloaded from the Honeywell International Inc. website which describes the use of their A-C 392 wax (the other wax taught by Morgan) in floor polishes to "increase resistance to abrasion and scuffing".

As stated by Dr. Hutter, a skilled artisan would not read Morgan as suggesting the use of polyethylene waxes to impart water resistance properties. Indeed, the accompanying

their polyethylene waxes into polish formulations. Attention is respectively directed to this table, where it should be noted that no benefit whatsoever is listed for the use of polyethylene waxes (including A-C 392 wax) under the "water repellant" heading in that table.

U.S. Patent No. 4,371,669 to Mylonakis et al. ("Mylonakis") is cited by the Office Action as disclosing:

> ...a carboxyl functional copolymer prepared by an emulsion polymerization method for producing polymeric coatings having water resistance properties, column 3, lines 46-47, column 4, line 45. The composition can include tall oil fatty acids, column 7, line 65.

In his Declaration Dr. Hutter states that one skilled in the art would understand that the carboxy functional, addition copolymers taught and claimed by Mylonakis fundamentally differ from the applicants' aqueous polymer compositions. For example, Mylonakis specifically states (col. 2, line 66 – col. 3, line 2) that:

> Polymeric coatings made in accordance with this invention using the monomers disclosed herein have improved water resistance. The improved resistance to aqueous liquids is obtained by the **decarboxylation** of the polymerized novel monomers of this invention.

As noted by Dr. Hutter, a skilled artisan would recognize that applicants' aqueous polymer compositions do not undergo decarboxylation due to the inherent stability of their molecular structures.

In applying Mylonakis the Office Action states (p. 4) that:

> The motivation is that it is within the skill of one in the art to use a tall-oil fatty acid in Mylonakis for the composition in Morgan's invention because of the ability to improve the resistance of the film to attach by water, Mylonakis column 7, line 54.

However, in the cited passage from Example 2 (col. 7, lines 50-54) Mylonakis states that:

> The carboxyl functionality present in the electrocoated film due to the novel monomer of this invention is lost by **decarboxylation** during the heat cure of the resin film, thereby improving the resistance of the film to later attack by water.

Again, it should be noted that Mylonakis teaches a specific mechanism for improving water resistance in his coating compositions - decarboxylation. This mechanism is not

It is respectfully submitted that no tall oil fatty acids are employed by Mylonakis in the cited Example 2. It is believed that the only time tall oil fatty acids are mentioned in Mylonakis is found in Example 3 (col. 7, line 65). As stated by Dr. Hutter, one skilled in the art would recognize that in Example 3 Mylonakis teaches reacting the epoxy resin and the tall oil fatty acids in an **esterification reaction** (which would result in the tall oil fatty acids no longer containing carboxyl groups). In contrast, the applicants teach the reaction of fatty acids in an **emulsion polymerization reaction** (which would result in the presence of carboxyl groups). As noted by Dr. Hutter, these different reaction mechanisms produce significantly different reaction products having appreciably different chemical properties.

Moreover, the employment of fatty acid esters of epoxy resins as **adhesion promoters** in metal primer coatings is well known in the art. As noted by Dr. Hutter, one skilled in the art would understand that Mylonakis is teaching the addition and reaction of tall oil fatty acid in Example 3 in order to enhance the adhesion of the coating formulation to the zinc phosphate treated steel panels used in that Example – not as an additive to improve water resistance.

For the reasons noted above, it is respectfully submitted that neither Morgan nor Mylonakis, either alone or in combination, would teach or suggest the applicants' polymer composition to one skilled in the art.

It is further respectfully submitted that, in the absence of the applicants' teachings, there would be no suggestion or motivation to one skilled in the art to even attempt to combine the Morgan and Mylonakis references – and that such an attempted combination would be the result of hindsight analysis. As the court stated in *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 220 USPQ 303 (1983):

> To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references or record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.

Therefore, for the reasons stated, it is respectfully submitted that the claimed invention as amended is patentable and that the claims are in condition for allowance. Such action by the

If the Examiner believes, for any reason, that personal communication will expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

No additional fees (other than for the time extension included herein) are believed to be due in connection with the filing of this amendment and response. Should it be determined that additional fees are due and payable, the Commissioner is authorized to charge any required fees or credit any overpayment to the assignee's Deposit Account No. 23-1160.

Respectfully submitted,

MEADWESTVACO CORPORATION

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Attachment

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